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SUPPLEMENTARY MEMORANDUM ON INSECT CONDITIONS
YOSEMITE NATIONAL PARK
MARCH 18, 1931

An extensive examination of portions of the Yosemite National Park was made from March 13 to 16, 1931, for the purpose of ascertaining what developments had taken place in the areas since the time of the last examination in August, 1930. It was found that the winter brood of 1930 had caused an alarming increase in some areas; and this, coupled with the facts that the infestation at the present time has all the appearances of the start of a similar infestation that has been causing great losses in the same type of stand in the same altitudinal belt of timber in the Sequoia National Forest and National Park, that the precipitation of the areas, at least since 1928, has been far below normal, and that the cores taken from living trees in the areas show a pattern and decrease in growth similar to that shown by cores from the infested areas to the south, indicates an impending epidemic.

The values at stake, from present indications, are the stand inthe Yosemite Valley and the screen of timber lining the Wawona Road. The Valley is not immediately endangered, but as the Big Meadows area shows a typical increase, it is to be expected that the infestation by subsequent broods of the western pine beetle will follow the yellow pine type of timber and invade the Valley.

Infestations

Yosemite Valley

Indications during the cruise of last August were that endemic conditions existed in this area. It is estimated that approximately 25 winter brood trees are now to be found in the area, which indicates a very marked increase, although there has been no noticeable grouping of the infested trees and thus it cannot yet be considered that the epidemic has actually reached the critical stage in the Valley.

Big Meadows

This area must be considered as a protective area for the Valley floor. Indications at the time of the August cruise were that increases had occurred during the summer of 1930. It is evident that these increases have continued, and the winter brood losses show evidences of an epidemic condition. In this area the natural boundaries include a small portion of land in the Stanislaus National Forest which shows a typical grouping of losses, and which should be considered and treated in connection with the area within the park. It is estimated that approximately 95 winter brood trees will be found in this area.

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Wawona Road Strip.

This area shows but a slight increase within the park lands north of Chinquapin, but road-building activities have brought about abnormal conditions, and the infestation appears to be of sufficient intensity in yellow pine and sugar pine to warrant control measures. As this area also forms a portion of the protecting area for the Valley timber stands, it should be thoroughly treated, both from the standpoint of protection and to prevent further increases due to the effect of construction operations.

South of Chinquapin epidemic conditions already exist. These conditions could not be foreseen from any indications given by the summer brood trees noted in the cruise of August 1930, and the recommendations for control work in that area were made only with the idea of suppressing further losses due to construction and of maintaining an endemic condition of infestation within the national park. The presence of the present epidemic conditions will make the park boundary an entirely artificial and inadequate barrier, and it will be necessary to include some Forest Service holdings within the control area if the control work is to be effective to any degree. It is recommended that the control work extend to the South Fork of the Merced River. It is estimated that approximately 300 winter brood trees will be found in the so-called Wawona Road Strip and the National Forest holdings extending west to the South Fork of the Merced River.

Revised Estimates

The following revision has been made in the estimates given in my report of September 1930:

Area	Infested Trees	Ownership	Estimated Cost N.P.S.	Estimated Cost F.S.
Yosemite Valley	25 Y.P.	N.P.S.	$300	
Big Meadows	60 Y.P.	N.P.S.	420	
	30 "	F.S.		$180
	10 "	Private		
Wawona Road Strip	125 Y.P. & S.P.	N.P.S.	875	
	175 " "	F.S.		1,225
			$1,595	$1,405

The estimates for Mariposa Grove, Cottonwood Creek and possibly the Little Yosemite lodgepole infestation and that in Peregoy Meadows remain the same.

Recommendations

Immediate action should be taken if the values at stake are to be retained. It is probable that not more than one month's time is available for the control work in the three areas for which revised estimates have been given, and it is doubtful if

control work can be carried on later than the last week in April. This is due to the fact that the beetles will be emerging, the fire hazard will become too great for control by burning, and the brood will probably be too far along to permit methods of solar control. If 30 working days are available for control work, this will mean that an average of 14 trees per day must be maintained. As much of the area is rugged, and asmuch time will be consumed in reaching and treating trees in relatively inaccessible places, it will probably be necessary to place two full treating crews of 11 men each in the field. The Yosemite Valley can be treated from headquarters, but time would probably be saved by establishing camps for work in the Big Meadows and Wawona areas. Practice has shown that a crew consisting of a foreman spotter, three 3-man treating crews and a cook is the most efficient crew.

As control operations for the three areas for which revised estimates have been given necessitate cooperation with the Forest Service, it will probably be necessary for the National Park Service to make what arrangements are possible. If it is not possible to secure aid from the Forest Service in protecting the values at stake within the park, an alternative plan for treating the Yosemite Valley infestation and that in Big Meadows and on the Wawona Road approximately to Bishop Creek would secure protection for the Valley and for the road strip to that point, as cutover lands border the park property. The road cover beyond that point would have to be sacrificed if aid cannot be secured.

When the control operations in the three areas dealt with in this report are completed, the operations in the Mariposa Grove, Cotton_wood Creek and possibly Little Yosemite Valley and Peregoy Meadows should be carried out as recommended in September 1930. As different insects are concerned in these areas (mountain pine beetle and Jeffrey pine beetle), fire hazard will be the limiting factor, as the beetles emerge at a later date than the western pine beetle.

K. A. SALMAN, Agent,
Bureau of Entomology.

Berkeley, Calif.,
March 18, 1931.